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10/613,577	07/02/2003	Koichi Yoshihara	7674 US	4481

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EXAMINER	
WANG, TED M	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/613,577	YOSHIHARA, KOICHI	
	Examiner	Art Unit	
	TED M. WANG	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *10 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-7 and 9-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3,9 and 10* is/are rejected.

7)☒ Claim(s) *4-7,11-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed on 04/10/2009, have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitations.

Independent Claims 2 and 9

(1) ***Applicants' argument*** – "Applicant respectfully asserts that the Examiner's interpretation of Takao is improper because the Examiner uses Takao's A/D converters 2 and 3 both to describe Applicant's "means for deriving.., a symbol clock... " and to describe Applicant's "means for sampling the quadrature component signals..." (underlined above). However, they cannot be used to satisfy both claim limitations.

Put another way, under the Examiner's interpretation, Takao's "symbol clock" (the signal t0) is not derived from the "modulated signal" (the outputs of Takao's quadrature detector 1), rather it is derived from Takao's "pseudo-symbols" (the signals I and Q). Alternatively, if the Examiner takes the view that Takao's A/D converters 2 and 3 are part of Takao's "means for deriving.., a symbol clock... ," then Takao cannot describe "means for sampling the quadrature component signals..." Nothing in the APA remedies this deficiency in the Examiner's interpretation of Takao." as recited in page 7 of the remark, dated 4/10/2009.

Examiner's response –

The claim limitation recites "means for deriving quadrature component signals and a symbol clock from the modulated signal; means for generating a sample clock having …" The Examiner interprets this limitation as " deriving quadrature component signals and a symbol clock from the modulated signal; generating a sample clock having …" since there is no Disclosure or Insufficient Disclosure of the Structure, Material, or Acts for Performing the Function Recited in a Claim Limitation Invoking 35 U.S.C. 112, Sixth Paragraph. i.e. The claim limitation is a means (or step) plus function limitation that invokes 35 U.S.C.112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

In Takao's reference, Fig.35, teaches that the symbol clock (t0) at phase shift circuit 7 output is derived from the IF input signal (modulated signal) via elements 1, 2, 3, 123, 124, 32f and 7.

Takao further teaches that the symbol clock t0 is then delayed or phase shifted by simple clock generator 21a to generate sampling clocks (t_a and t_b) to sample the A/D at proper rate.

The claim limitation does not limit "**deriving a symbol clock** and **generating a symbol clock"** to be two different circuits without overlapping or feedback. Thus, for the explanation addressed in the above paragraph, the rejection under 35 U.S.C. 103(a) with Takao's reference is adequate.

Dependent Claims 3 and 10

(2) ***Applicants' argument*** – "Claims 3 and 10 are allowable because they depend from claims 2 and 9 respectively, both of which are allowable for the reasons discussed above. Furthermore, the addition of Touzni does not remedy any of the deficiencies of the Examiner's proposed combination regarding claims 2 and 9 discussed above." as recited in pages 7-8 of the remark, dated 4/10/2009.

Examiner's response – The Examiner's response has been addressed in the above paragraph.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao et al. (US 5,920,220) in view of the admitted prior art of the instant application.

- With regard claim 2, Takao et al. discloses an apparatus comprising:

  means for deriving quadrature component signals and a symbol clock from the modulated signal (Fig.35 element 5j and column 25 lines 16-35, where examiner considers the t_0 as symbol clock that is generated based on the input modulated signal I and Q to the clock timing recover circuit 5j.);

means for generating a sample clock having a period equal to the symbol clock (Fig.35 elements 51 and 52 outputs, t_a and t_b, to input of A/D converters (elements 2 and 3)), the sample clock being shifted one-half period in phase with respect to the symbol clock (Fig.35 element 31a, where the +δt 52 and +δt 51 are predetermined amount of phase shift can be set to any period in phase with respect to t_0 (symbol clock)); and

means for sampling the quadrature component signals with the sample clock to produce pseudo-symbols as pairs of pseudo-symbols about a symbol sample point for each symbol (Fig.35, outputs of A/D converters, 2 and 3, where the quadrature modulated signals from the outputs of quadrature detector are sampled by the sampling clock output from element 5e to generate the sample pairs, known as pseudo-symbol as defined by the specification of the instant application (page 4 lines 10-13) that are symmetric about a symbol sample point.)

Takao et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching means for displaying the pseudo-symbols on a quadrature coordinate plane.

However, the admitted prior art of the instant application teaches means for displaying the pseudo-symbols on a quadrature coordinate plane (Fig.5 elements 36 and 38, where Fig.5 without element 30, MOD (delay), is a conventional receiver (page 11, lines 1-16).) in order to display the distortion so that the distortion can be corrected to improve the quality. Therefore, It would

have been obvious to one of ordinary skill in the art at the time of the invention was made to include memory 36 and display 38 as taught by the admitted prior art of the instant application into Fig.35 of the Takao's receiver circuitry to receive the output signals of the A/D converters 2 and 3 in order to display the distortion so that the distortion can be corrected to improve the quality.

- With regard claim 9, which is a method claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.

4. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao et al. (US 5,920,220) and the admitted prior art of the instant application as applied to claim 2 above, and further in view of Touzni et al. (US 7,031,405).

- With regard claim 3, Takao et al. and the admitted prior art of the instant application disclose all of the subject matter as described in the above paragraph except for specifically teaching means for generating a template for the displaying means representing an ideal modulated signal.

  However, Touzni et al. teaches means for generating a template for the displaying means representing an ideal modulated signal (Fig.3 and column 5 lines 12-38, where the small circles located on the circle 311, 315, 312, and 313 are the ideal modulation signal and the star 303 represents the received signal) in order to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation does not penalize spatial rotation of the constellation due to residual carrier

offset. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include means for generating a template for the displaying means representing an ideal modulated signal as taught by Touzni et al. into the modified conventional receiver as described by the admitted prior art of the instant application (page 11 lines 1-16) and Takao et al. so as to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation does not penalize spatial rotation of the constellation due to residual carrier offset.

- With regard claim 10, which is a method claim related to claim 3, all limitation is contained in claim 3. The explanation of all the limitation is already addressed in the above paragraph.

Allowable Subject Matter

5. Claims 4-7 are objected to as being dependent upon an objected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ted M Wang/
Primary Examiner, Art Unit 2611